



July/August 2018

Xplor

WASP

YOUR WORRY?

WITH THE RIGHT APPROACH, WASPS
ARE WONDERFULLY WATCHABLE

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This painted bunting needs a napkin. Look closely at its beak and you'll see a purple stain from all the berries it has eaten.

📷 by Noppadol Paothong





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Xplor (ISSN 2151-8351) is published bimonthly. It is a publication of the Missouri Department of Conservation, 2901 West Truman Boulevard, Jefferson City, MO (Mailing address: PO Box 180, Jefferson City, MO 65102.) Subscription free to Missouri residents (one per household); out of state \$5 per year; out of country \$8 per year. Please allow 6-8 weeks for first issue. Notification of address change must include both old and new address (send mailing label with the subscriber number on it) with 60-day notice. Preferred periodical postage paid at Jefferson City, Missouri, and at additional entry offices. **Postmaster:** Send correspondence to *Xplor Circulation*, PO Box 180, Jefferson City, MO 65102-0180. Phone: 573-751-4115, ext. 3856 or 3249.

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ON THE COVER

Yellowjacket

by Noppadol Paothong

GET OUT!

FUN THINGS TO DO
AND GREAT PLACES
TO DISCOVER NATURE



Baby bats
start flying
in early August.
**WATCH FOR
THEM AT DUSK.**



Like grilled mushrooms
on your burger? **LOOK
FOR CHANTERELLES
IN JULY AND AUGUST**
(and never eat a mushroom
unless you're sure it's edible).

In August, female copperhead snakes give birth
to live babies. **IF YOU SEE ONE OF THESE
BEAUTIFUL — BUT VENOMOUS —
SNAKES, ENJOY WATCHING IT
FROM A SAFE DISTANCE.**



Copperhead young have green tails!

**DON'T LET CHIGGERS
SPOIL YOUR MIDSUMMER
BERRY-PICKING.**



Avoid tall grass,
wear long sleeves,
and tuck your pant
legs into your socks.



Why did the tarantula cross the road?
To find a sweetheart.

**LOOK FOR MALE
TARANTULAS
CROSSING
ROADS IN
SOUTHWEST
MISSOURI!**



**HAVE FUN
LEARNING TO FISH
WITH YOUR FOLKS.**

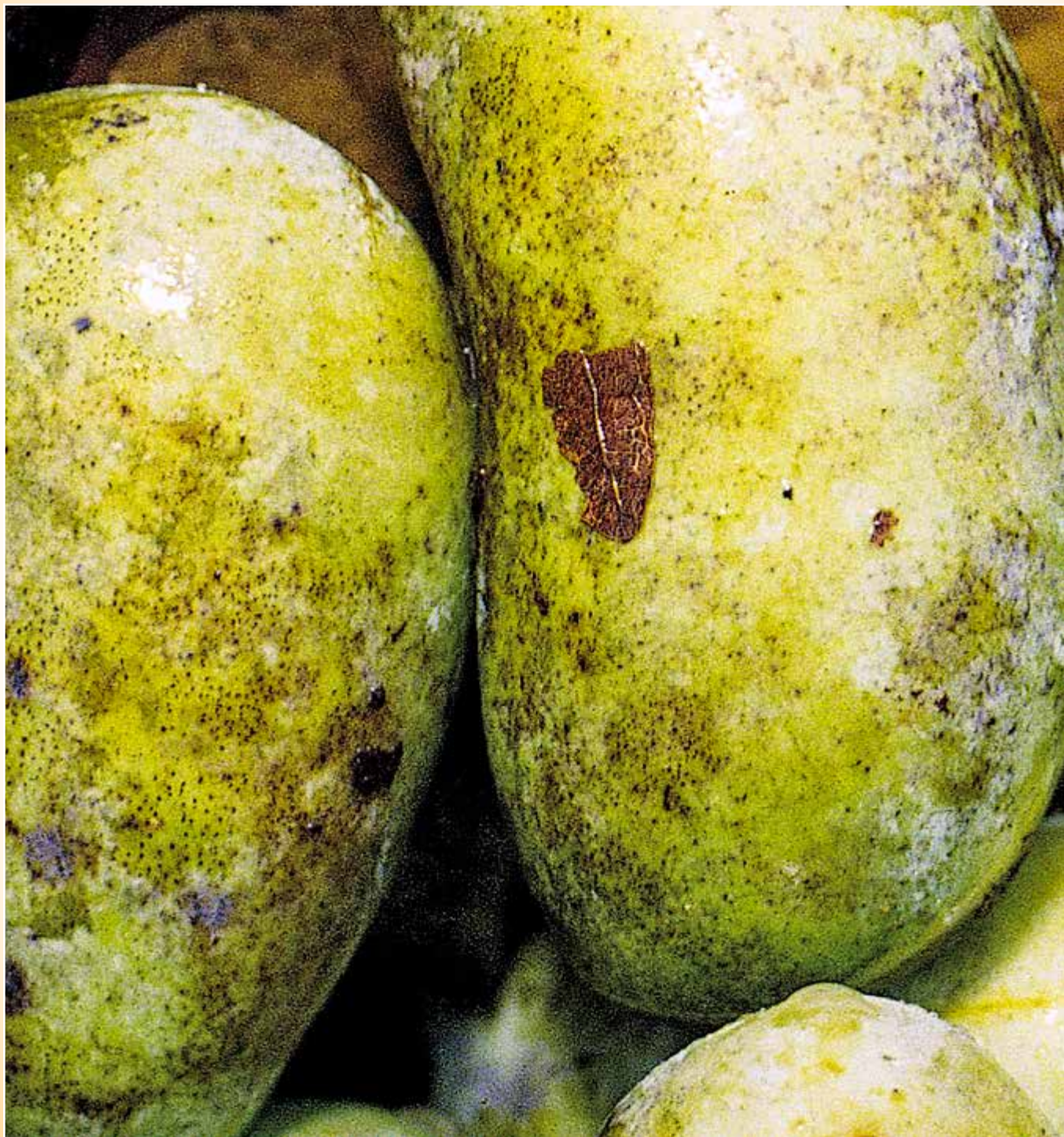
Register for a
free Discover
Nature — Fishing
class near you at
**mdc.mo.gov/
discoverfishing.**



WHAT IS IT?

DON'T KNOW?

Jump to Page 20 to find out.



❶ I grow by the stream, where it's shady and cool.

❷ Pinch my leaves, and they'll smell like diesel fuel.

❸ Look up to find my tasty green fruit.

❹ Too late — the animals have beaten you to it!

Into the WILD stream pool

Take a Closer Look

If you're snorkeling and spot a slight movement in the gravel or a tiny puff of sand, don't move a muscle — it might be a **mussel**. The clamlike animals lie half-buried at the bottoms of streams. If you touch a live mussel, it will think you are a predator and quickly clamp its shells shut.



Strap on your mask and snorkel! It's time to explore a cool pool in a clear Ozark stream.

LOOK

Peer into a pool, and you'll be amazed at the rainbow of fish you find. Minnows, shiners, and darters of every color often school in the calm water behind boulders. How many of these fantastically flashy fish can you find?



Listen

When startled, female **wood ducks** squeal. If you surprise one while exploring a stream, listen for her shrill ooh-eek, ooh-eek, ooh-eek call as she flies away.



Greenside darter



Bleeding shiner



Northern studfish



Rainbow darter

Do More

When exploring a stream, bring along a trash bag so you can pick up litter you see.

Take a Closer Look

Inspect the rocks in a swift-flowing stream, and you may find some pennies. But they aren't the kind you can spend. **Water pennies** are flat, copper-colored baby insects. They cling to rocks and feed on algae and microscopic creatures.

Did You Know?

Water pennies are baby beetles. They live underwater as larvae but breathe air as adults. Finding a water penny is a good sign. It means the water is clear and clean.

LOOK

Fishing spiders are so light they can walk on water! Sometimes they sail across the surface by lifting up two legs to catch the wind. They gather air bubbles on their hairy legs. This allows them to stay underwater for half an hour. Search the shoreline for these amazing arachnids.



Southern redbelly dace



Ozark minnow



Orangethroat darter

LOOK

Missouri's most common swimming serpent — the northern watersnake — is harmless, but people often confuse it with the rarer but venomous western cottonmouth. Here's how to tell them apart.

Northern watersnake

- Harmless (but sometimes bitey)
- Gray to reddish-brown body with brown, reddish-brown, or blackish bands
- Round pupils
- If threatened, will try to flee

Western cottonmouth

- Venomous (and sometimes cranky)
- Dark olive-brown to nearly black body with dark bands that are often hard to see
- Head usually has a black stripe running from the snout to the neck
- Vertical pupils (like a cat's)
- Swims with its head above the water's surface, exposing its back
- If threatened, may hold its ground and show its fangs and cottony mouth

WATCHABLE WASPS

**Five winged and
wingless, stinging
and stingless wasps
to Xplor**

(and one to watch out for)

By Bonnie Chasteen

Sure, some wasps can put the sting on summer fun. But the truth is, Missouri's wasps aren't out to hurt you. Many don't even sting, and those that do are only trying to protect their nests. Most kinds of wasps are among our best friends in the natural world. They help pollinate our wildflowers and food, and they control other bugs that bug us like crop pests. They also serve as prey for birds like the summer tanager, which catches wasps to feed its babies. Amazing, right?!

Once you know what to look for, how to approach them, and what to expect, wasp-awareness can go from summer worry to summer wonder.

Let's take a look at five wasps you're likely to see this summer — and one to watch out for.



Can it Hurt Me?

Sometimes yes, sometimes no. Use Xplor's handy sting pain scale to judge how closely you should watch a wasp.

Pain level



It can't sting you (but you can't stop thinking about it).



Hurts! Like getting bitten by your little sister.



Really hurts!! Like touching an electric fence.



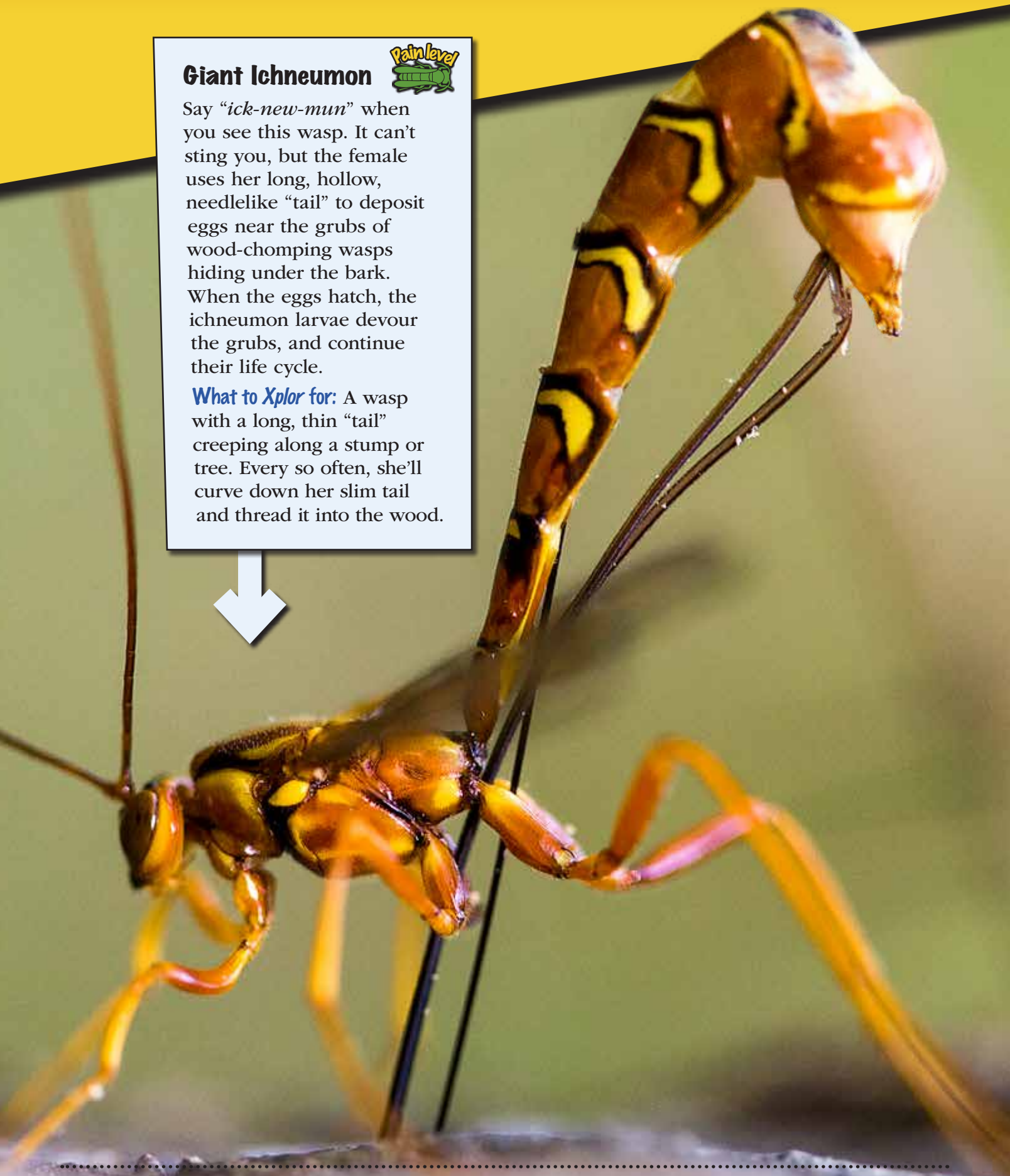
Hurts the most!!! Like getting hit with a sledge hammer.

Giant Ichneumon



Say “ick-new-mun” when you see this wasp. It can’t sting you, but the female uses her long, hollow, needlelike “tail” to deposit eggs near the grubs of wood-chomping wasps hiding under the bark. When the eggs hatch, the ichneumon larvae devour the grubs, and continue their life cycle.

What to Xplor for: A wasp with a long, thin “tail” creeping along a stump or tree. Every so often, she’ll curve down her slim tail and thread it into the wood.



Velvet Ant



The females of this wasp lack wings and look like large, furry, red-and-black ants. That's no surprise since wasps, ants, and bees are members of the same group of insects. Velvet ants aren't aggressive, but if you pick one up, you'll find out why it's also called "cow killer."

What to Xplor for: This is your chance to watch two kinds of wasps at the same time. While you're in an open, sandy area where cicada killers live, keep an eye out for the female velvet ant. When she finds a cicada killer nest, she'll dig in and lay her eggs in the nursery cells. Can you guess what happens when her eggs hatch? That's right, the velvet ant larvae will eat the cicada killer grubs. You could even call a velvet ant a cicada killer killer.



Cicada Killer



Only the females of these big, ground-nesting wasps can sting, and — unless you try to handle them — they only attack dog-day cicadas. They stock their nests with two cicadas per cell.

What to Xplor for: In open, sandy areas, a mound of loose dirt with a shallow furrow marks a tunnel entrance. It's fun to watch these wasps drag big, clunky cicadas into their nests.



To learn more about Missouri's buzziest insects, visit mdc.mo.gov/field-guide.



Bald-Faced Hornet



These large black-and-white wasps pollinate wildflowers and food, and they catch insects to chew up and feed their young. If you get too close to their big, papery nests, they'll sting you, but if you keep your distance, they won't bug you.

What to Xplor for: A large, urn-shaped gray nest hanging in a hedgerow or up in a tree.

Paper Wasp



This familiar wasp likes to nest around houses and buildings. It pollinates our wildflowers and food as it searches for nectar. It also collects caterpillars to feed its young, helping to control crop pests. It isn't too aggressive — unless you reach for its nest. (But if you're careful, you can generally avoid getting stung by this wasp.)

What to Xplor for: A wasp carrying a caterpillar back to a tan, papery layer of honeycomb cells hanging by a single stalk from a doorway or an eave.



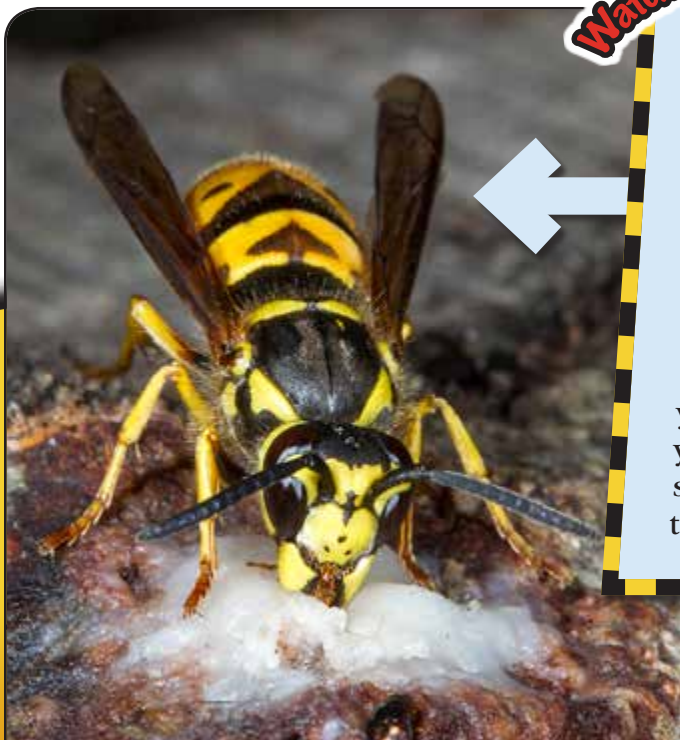
Watch out!

Yellowjacket



If there were a prize for homeland defense, this wasp would win it. It looks and acts like an easy-going honeybee, always searching for something sweet to eat. But if you accidentally run into its nest, it will sting you repeatedly.

What to watch out for: Yellowjackets usually make their large, papery nests underground, so they're hard to spot. To detect a nest before you step on it, keep an eye out for slim, shiny, yellow-and-black wasps that fly quickly in a straight line. If you can see where they go into the ground, you'll know to avoid that location.





Hi, I'm Nop. I'm a nature photographer. I take photos of animals, plants, and wild places for *Xplor*.

Nature photographers often use fancy cameras and expensive lenses. But I can teach you tips that will make getting great shots a snap — no matter what kind of gear you use. Grab your camera, and let's go!

Nop's Guide to **NATURE** Photography



Pale purple coneflowers

GET THE RIGHT LIGHT

Did you know that the word “photography” means “to write with light”? To be a better photographer, start paying attention to how the direction and character of light changes the way your subject looks.

DIRECTION

Front lighting is when light shines on the parts of your subject that face the camera. This kind of lighting shows all the details of your subject and makes it look bright and clear.

Back lighting is when light shines on the parts of your subject that face away from the camera. In other words, the light is behind your subject. This creates a dramatic “halo” around the edge of your subject, but color and details often disappear in dark shadows.

Side lighting is when light shines on the side of your subject. This creates shadows. Shadows can sometimes make your photo look more 3-D, but they can also cause details to disappear in the dark parts of the image. If you’re not sure what direction of light is best for your photo, try front lighting first.

CHARACTER

Besides having a direction, light also has character. It can look warm or cool, soft or harsh. Morning light looks warm and golden. (So does evening light.) Afternoon light often looks cool and harsh.

There’s no reason to stay inside when it’s cloudy. Overcast days are perfect for photographing flowers and insects. The soft light makes colors pop. Just don’t forget to pack a raincoat!



FRONT LIGHTING



Greater prairie-chicken



Upland sandpiper

BACK LIGHTING



Greater prairie-chicken

SIDE LIGHTING



ZOOM WITH YOUR FEET



Northern cardinal

On smartphones, you can pinch the screen to zoom in on that bird you're trying to photograph. Don't do it! This will make your photo look grainy. It's much better to use a different piece of gear — your feet — to get as close as you can to your subject.

To sneak up on jittery critters, avoid walking right at them. If you do, they'll scurry, slither, or fly to the next county. Try this trick instead: Pretend you're out for a stroll and couldn't care less about the animal. Zigzag back and forth — *la, la, la* — as you approach. Take ... your ... time. If the animal looks nervous, stop. Just sit still and do nothing. When the critter calms down, keep going.

Henslow's sparrow



VS



OK, maybe this is too close. But for sparrows and other small creatures, creeping closer can turn a good shot into a great shot.





Whoa!
Never shoot when
you're wobbly. A tripod
steadied my camera for this
shot, so the focus turned
out as sharp as the
bird's beak.



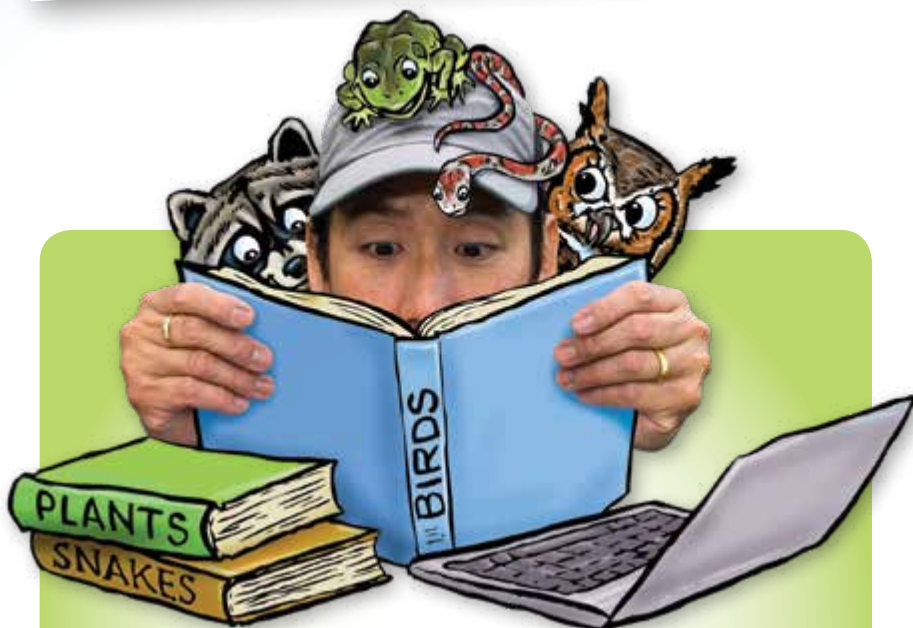
Belted kingfisher

STAY FOCUSED

The flashiest flower won't look fantastic if your photo is out of focus. (Try saying that five times fast!) Blurry pics happen because either your camera or your subject is moving.

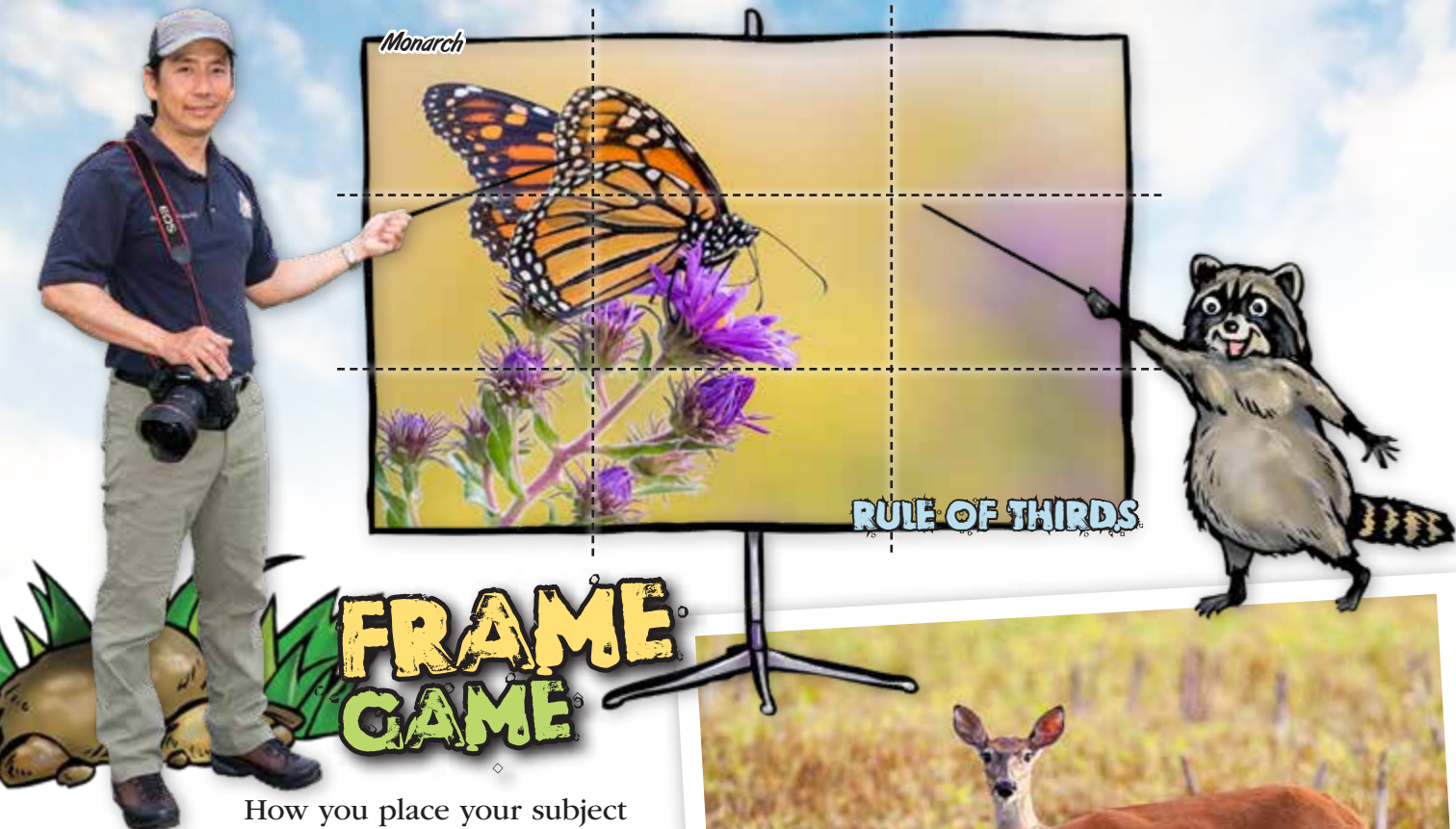
To hold my camera steady, I use a tripod. No tripod? No problem. You can turn your body into a tripod by sitting down and propping your arms on your knees. Or just prop your camera on a log or rock.

Getting your subject to hold steady is a different story. It's easy to get a plant to be still. Just wait for the wind to quit blowing. Animals are tougher, especially energetic critters like birds and chipmunks. Take lots of shots to try to capture the animal at the peak of its action. And don't quit shooting until after the moment has passed.



DO YOUR HOMEWORK

One of my best tips is really simple: learn about your subject. To be a better nature photographer, be a better naturalist. Read *Xplor*, study field guides, watch nature videos, and get outside as much as possible. The more you know, the more you'll see to photograph.



How you place your subject in the frame can make or break a photo. Photographers call this composition. Follow these tips to create interesting, eye-popping compositions.

If you don't know where to start, try the rule of thirds. Pretend your camera frame is divided into thirds like a tic-tac-toe grid. Place your subject where the horizontal and vertical lines cross.

Beginners often place their subject dead center in the frame. Usually it's more interesting to give a plant or animal room to roam. Try placing it off to one side. This also helps show a bit of the habitat where it lives.

Don't shoot everything from your perspective. Get eye-to-eye with your subject — even if it doesn't have eyes. Crouch down to include the blue sky behind a prairie flower. Lie on your belly to shoot a crawling bug. Focus on an animal's eyes, and you'll get a peek at how it sees the world.

Pay attention to what's behind your subject. There's nothing worse than discovering a branch sticking up awkwardly behind a squirrel's head after it's too late to retake the shot. Move in close so your subject fills most of the frame. That way, it doesn't have to compete with a busy background.



SHOW SOME RESPECT

No picture is worth more than the safety of your subject. Don't expose a robin's nest to the elements just to get a good shot. Don't dig up a clump of coneflowers just to move them to a prettier place. Don't keep a mama cottontail away from her hungry babies. Don't harm what you love.



Eastern cottontail

Thanks for taking photos with me! Follow my tips, and I'm sure you'll be making wild, awesome images in no time.



Dragonfly



THIS
ISSUE:

FERAL HOG VS WILD TURKEY

Illustrated by David Besenger

Hazardous Hooves

Four heavy-duty trotters make the feral hog a high-speed, pork-powered plow.

Savage Snout

With a keen sense of smell, shovel-shaped nose, and a tusk-filled mouth, the feral hog is designed to seek and destroy.

Fast Flappers

Turkeys usually travel by foot, but their powerful wings can whisk them to safety.

Nest Numbers

If a turkey hen loses her eggs, she may nest again.

AND THE WINNER IS...

Feral hogs are domestic animals gone wild, and the Conservation Department is working to eliminate them. The hen flies to safety, but the hog eats all her eggs.

STRANGE but TRUE!

YOUR GUIDE TO ALL THE
UNUSUAL, UNIQUE,
AND **UNBELIEVABLE** STUFF
THAT GOES ON IN NATURE

Have you ever found a tick in your hair? Gross, right? Well, when an **OPOSSUM** finds a tick in its fur, the scruffy mammal eats the bloodsucker. In fact, a single opossum may snarf down nearly 4,000 ticks in a week!



Hey, four-eyes! A **WHIRLIGIG BEETLE** has four large compound eyes — two on top of its head and two underneath. The top set watches for danger up above, while the bottom set peers underwater, looking for lunch.



Pip, pip, hooray! When hatching, a **BABY BIRD** pips (breaks open) the shell of its egg using a hornlike knob at the end of its beak called an egg tooth. The tooth disappears shortly after the hatchling breaks free.

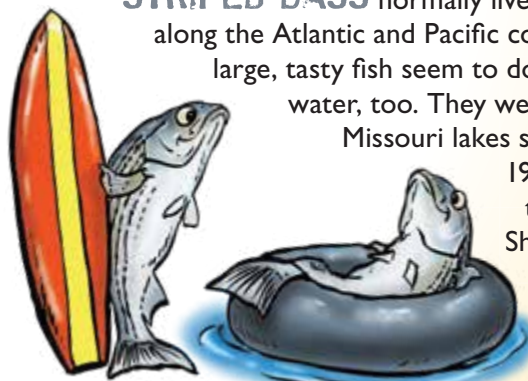
Don't say you weren't warned. Before unleashing its funky fury, a **SPOTTED SKUNK** often stomps its front paws, flips up into a handstand, and walks around with its tail held high like a furry, black danger flag.



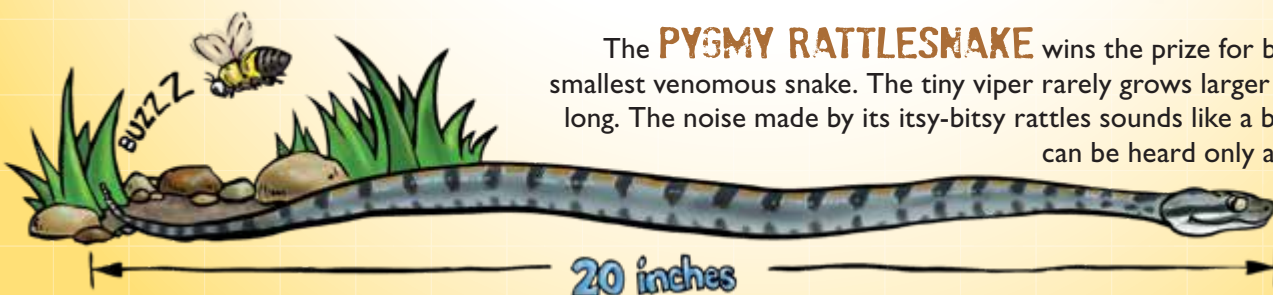
PIGEONS have an uncanny ability to find their way home. Biologists believe the often-seen birds can feel the Earth's magnetic field. Pigeons may also track the sun's position and follow familiar smells and sounds to find their way.



STRIPED BASS normally live in salt water along the Atlantic and Pacific coasts. But the large, tasty fish seem to do fine in fresh water, too. They were stocked in Missouri lakes starting in the 1960s and have thrived in the Show-Me State ever since.



The **PYGMY RATTLESNAKE** wins the prize for being Missouri's smallest venomous snake. The tiny viper rarely grows larger than 20 inches long. The noise made by its itty-bitsy rattles sounds like a bee buzzing and can be heard only a few feet away.



How To

Paddle a Canoe

There's no better way to beat the heat than floating a canoe down a cool Ozark stream. Follow these tips, and you'll be a paddling pro in no time.

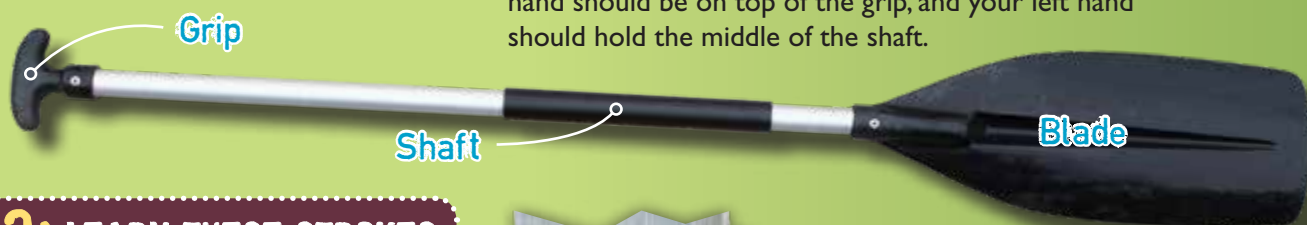
TIP 1: WEAR A LIFE JACKET

Even experienced paddlers flip a canoe every once in a while. Wear a life jacket at all times so you're prepared for unplanned swims.

TIP 2: HOLD YOUR PADDLE CORRECTLY

If you're paddling on the right side of the canoe, your left hand should be on top of the grip, and your right hand should hold the middle of the shaft.

If you're paddling on the left side of the canoe, your right hand should be on top of the grip, and your left hand should hold the middle of the shaft.



TIP 3: LEARN THESE STROKES

Different folks use different strokes, but these five will help you steer a canoe safely down a gently flowing stream.

Heads up! Canoe partners should paddle on opposite sides of the boat. If the person in the bow (front) paddles on the left, the person in the stern (back) should paddle on the right. If your arms get tired from paddling on one side, it's OK to switch. Just give your partner a heads-up before you do.

Back Stroke

This is the opposite of the forward stroke. Reach backward and push the paddle forward. This stroke is used to slow or stop the canoe from moving downstream.



Forward Stroke

Reach forward, place the paddle in the water, and pull straight back. When you pull the paddle from the water to start the next stroke, turn the blade so that it's flat and skims forward over the water's surface.



J Stroke

Canoes tend to turn during a forward stroke. The J stroke is used to correct the turn and keep the canoe going straight. Begin a forward stroke. When the blade goes behind your body, twist the shaft of the paddle so that the blade turns outward and makes a J in the water.



TIP 4: READ THE RIVER

Rocks, stumps, and other obstacles hide under the water's surface, waiting for a chance to flip your canoe. Learn to read the river so you can avoid these hazards.

Upstream V When a rock or stump is submerged just below the surface, water flowing around it forms a V with the tip pointing upstream. If you see an upstream V, paddle around it!

Downstream V When water flows between two obstacles, it forms a V with the tip pointing downstream. Aim your canoe toward the center of a downstream V, and you'll usually find smooth sailing.

Washboard Ripples These small, numerous waves indicate shallow water. They won't cause you to flip, but you'll often run aground and have to get out to pull your canoe.

Strainer The current cuts into the outer bends of rivers, washing away soil and causing trees to slide off the bank into the water. Avoid these trees! Their branches act like spaghetti strainers that can catch your canoe.

Horizon Line A horizontal line on the water's surface indicates a steep, sudden drop in the river. The drop could be a fun-to-run 3-foot ledge or a dangerous, canoe-crumpling waterfall. The only safe way to find out is to beach your canoe and hike downstream for a look.

Draw Stroke

When done from the stern, a draw stroke turns the canoe away from the side you are paddling on. Reach out away from the canoe and place the blade in the water. Push with your grip hand while pulling with your shaft hand.

Pry Stroke

This is the opposite of the draw stroke. When done from the stern, it turns the canoe toward the side you're paddling on. Place the blade straight down into the water directly beside the canoe. Pull with your grip hand while pushing with your shaft hand.

XPLOR·MOR

Snapshot SAFARI



Capturing photos of wild critters doing wild things is a wild (and fun) way to pass the time during summer break.

How many of these shots can you bag?



Butterfly on a flower



Pretty landscape
(such as a prairie, forest, or marsh)



Dew-covered spiderweb

WHAT IS IT?

— FROM PAGE 3 —

a blend of mango and banana, and some people even call them Indiana bananas. If you find a pawpaw patch, check it often because wildlife loves to eat them, too! Learn more at mdc.mo.gov/field-guide.

Walk along a shady stream in summer, and you might find a pawpaw patch. The trees' leaves are long and broad, and they smell like diesel fuel if you pinch them.

The short, stumpy green fruit tastes like





White-tailed deer



Animal gathering food



Woodpecker hammering on tree



Bird feeding its babies (Don't disturb the nest!)



Frog or toad hiding in its habitat

For advice on how to take better photos, check out

Nop's Guide to
NATURE
Photography
on Page 10.



Cottontail chewing on clover



Turtle on a log



Animal tracks in mud or sand



Close-up of a flower

Have you snapped a pic you're particularly proud of? Share it on social media with the hashtag **#MDCDiscoverNature**.



Mushroom from a mouse's viewpoint

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FREE TO MISSOURI HOUSEHOLDS

CRITTER CORNER Halloween Pennant



“Pennant” means “flag,” so this happy-faced dragonfly is well-named. When it’s at rest, it looks like an orange-and-black flag fluttering from a pole. It signals death to mosquitoes and other flying insects that haunt lakes and marshes from June to September. Its Halloween colors may also trick hungry birds into thinking it’s a bad-tasting monarch butterfly. See if you can spot it this summer. Learn more at mdc.mo.gov/field-guide.